

Raiders of the Lost Ark Density Activity

In the opening scenes of the movie, Indiana Jones tries to remove a golden idol from a booby-trapped pedestal. He replaces the idol with a bag of sand of approximately equal volume. ($D_{\text{gold}} = 19.32 \text{ g/cm}^3$; $D_{\text{sand}} = 3.0 \text{ g/cm}^3$)

1. Did he have a reasonable chance of not activating the booby trap? Assume a volume of 1L (10^3 mL) for the idol.
2. In a later scene, Dr. Jones and his unscrupulous guide play catch with the idol. Assuming that the volume of the idol is about 1L and that it is solid gold, what mass would the idol have? Is playing catch with it plausible? (Use factor label; $1\text{kg} = 2.2 \text{ lbs.}$)